CLAIMS

1. A tire structural member fabricating method, which fabricates a tire structural member by successively and contiguously attaching strips to a convex outer surface having an outwardly convex cross section of a forming drum by a strip feed device such that the strips extend obliquely to a center axis of the forming drum, said method comprising the steps of:

continuously attaching strips to the convex outer surface of the forming drum by successively feeding strips onto the convex outer surface by the strip feed device, while the strip feed device is being moved parallel to the center axis of the forming drum relative to the forming drum at a fixed speed and while the forming drum is being rotated about the center axis thereof; and

controlling the rotation of the forming drum such that the angular velocity of the forming drum varies gradually from a minimum angular velocity at a moment a leading end of the strip is attached to the convex outer surface of the forming drum to a maximum angular velocity at a moment the strip is attached to a middle part of the convex outer surface of the forming drum and from the maximum angular velocity to a minimum angular velocity at a moment a trailing end of the strip is attached to the convex outer surface of the forming drum, the minimum angular velocity at the moment the trailing end is attached being equal to the minimum angular velocity at the

moment the leading end is attached.

2. The tire structural member fabricating method according to claim 1, wherein the step of controlling the rotation of the forming drum controls the rotation of the forming roller so that the forming drum rotates at angular velocity ω meeting relation expressed by:

$$\tan^{-1}\left(\frac{r\omega}{V}\right) = \cos^{-1}\left(\frac{nw}{2\pi r}\right)$$

where **w** is a width of the strips, **n** is the number of the strips, V is the fixed speed of the strip feed device, and **r** is the radius of the convex outer surface of the forming drum as a function of a distance along the center axis of the forming drum by which the strip feed device travels.

3. The tire structural member fabricating method according to claim 1 or 2, wherein each of the strips is given opposite oblique ends inclined at an angle of $\cos^{-1}(nw/2\pi r_0)$to a direction in which the strip is fed, where r_0 is the radius of the opposite ends of the forming drum,.

4. A tire structural member fabricating apparatus comprising:

a forming drum having a convex outer surface having an outwardly convex cross section and supported for rotation about a center axis thereof;

a drum driving device for rotating the forming drum;

a strip feed device for successively feeding strips and

successively attaching the strips to the forming drum such that the strips are arranged successively and contiguously in a circumferential direction and are extended obliquely to the center axis of the forming drum; and

a moving device for moving the strip feed device parallel to the center axis of the forming drum;

wherein the moving device includes a strip feed device driving motor for moving the strip feed device at a fixed speed,

the drum driving device includes a drum driving motor,

a controller connected to the strip feed device driving motor and the drum driving motor, the controller controlling the strip feed device driving motor and the drum driving motor such that angular velocity of the forming drum varies gradually from a minimum angular velocity at a moment a leading end of the strip is attached to the convex outer surface of the forming drum to a maximum angular velocity at a moment the strip is attached to a middle part of the convex outer surface of the forming drum and from the maximum angular velocity to a minimum angular velocity at a moment a trailing end of the strip is attached to the convex outer surface of the forming drum, the minimum angular velocity at the moment the trailing end is attached being equal to the minimum angular velocity at the moment the leading end is attached.

5. The tire structural member fabricating apparatus according to claim 4, wherein the controller controls rotation

of the forming drum so that the forming drum rotates at angular velocity ω meeting relation expressed by:

$$\tan^{-1}\left(\frac{r\omega}{V}\right) = \cos^{-1}\left(\frac{nw}{2\pi r}\right)$$

where w is a width of the strips, n is the number of the strips, V is the fixed speed of the strip feed device and r is the radius of the convex outer surface of the forming drum as a function of distance along the center axis of the forming drum by which the strip feed device travels.